GOOD ACOUSTIC DESIGN - WHAT MIGHT IT ENTAIL

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THE CONTEXT OF GAD

Aims of the ProPG

• to assist the delivery of sustainable development by promoting good health and well-being through encouraging a good acoustic design process that is multi-faceted and seeks to deliver the best acoustic outcome for a particular site.

ProPG foreword/section 1 & SD2 section 1
## THE CONTEXT OF GAD

### What it should be

- essential and imperative consideration of acoustic design at an early stage – GAD covers both planning and design issues  
  *SD2 section 3.1*
- a multi-faceted and integrated approach to achieve good acoustic conditions, both internally and externally  
  *ProPG para 2.19*
- an integrated solution that achieves good (acoustic) outcomes for stakeholders without compromise with due consideration of other relevant issue  
  *ProPG foreword*

### What it shouldn’t be

- simply compliance with recommended internal and external noise exposure standards
- a one-size-fits-all approach, “overdesign” and/or “gold plating”
- solely relying on the building envelope aka creating *acoustic prisons*
ABILITY TO INFLUENCE

Setting the scene

Preferred position

London Plan 2016 refers to GAD

All-to-common present position

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ABILITY TO INFLUENCE

Possible “new” approaches
ABILITY TO INFLUENCE

Re-defining the goals

- GAD
- sustainability
- good health
- well-being/wellness
- positive/best outcomes
- occupants/end-users

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GREEN INFRASTRUCTURE

Metropolitan morphology

- Hardscapes radiate rather than absorb heat with -ve effects to water quality, heat-related illnesses (Urban Heat Island Effect)
- Soft Cityscapes with green infrastructure, such as moss walls/tree façades and planting improves aesthetics, well-being, and the cooling potential of buildings

(\textit{SD2 sections 3.1 i-vi, 3.2, 3.5, 3.7, 3.10})
**GREEN INFRASTRUCTURE**

**Forming quieter surroundings**

Primary effects

- planting belts incorporating trees less than 3m in width can provide modest noise reduction
- augmented by
  - planting mix
  - soft, rough ground and understorey vegetation attenuate low frequency sound
  - bunds or fencing

Secondary effects

- soundscaping (birdsong)
- removing visual contact with the noise psychologically reduces the irritating effects

CIRIA C712 London, 2012
The benefits of large species trees in urban landscapes: a costing, design and management guide
GREEN INFRASTRUCTURE

Green Building Envelope

- published evidence indicating green façades can act as effective sound absorbers (HOSANNA project et al)
- greater levels of attenuation in “canyon” conditions and at greater distance from source and of emergent noise control
- Sensitive to street width, building dims, overhangs, façade coverage area
- psychological perception of quiet complementing physical reductions

http://www.arup.com/cities_alive/green_building_envelope
QUALITY OF LIFE EVALUATION

Current ‘best’ practice

- few POE platforms (BUS methodology) geared-up to domestic buildings
- limited take-up currently (ca. 10% of all buildings in dataset)
- best response rates from paper surveys - barrier to large scale deployments
- lends itself more to PRS and HA
QUALITY OF LIFE EVALUATION

Future shape

• virtuous feedback cycle - influencing business models/briefs, policy
  *ProPG paras 3.14-3.15*

• more attention given to quality of service as a differentiator

• smart digital solution/Internet of Things (environmental sensors with real-time feedback collected (wearables/GoogleHome/mobilePhone)

• potential advantage of big-data *ProPG paras 3.14-3.15*
MONETISATION

Research and the “business” case

Key findings
• disproportionately low amount of research
• evidence that ‘peace and quiet’ is a KPI
• evidence of ‘Place-making’ ProPG Stage 2 element 3
• evidence that property differentiation could enjoy lower void rates, increased rental, capital value
• evidence not yet translating into widespread action in the market
GREATER INFLUENCE

Enriched discussions/Deeper understanding
WHEN GAD COMES TOGETHER

Good Use of Space & Mass  *SD2 sections 3.1-3.7,3.10*
WHEN GAD COMES TOGETHER

Good Envelope Design #1

SD2 sections 3.8-3.9
WHEN GAD COMES TOGETHER

Good Envelope Design #2  *SD2 sections 3.8-3.9*
WHAT GAD MIGHT (SHOULD) ENTAIL

Recap

• Industry recognition and acceptance - future GAD Award Scheme  *SD2 section 4 & ProPG section 2.24*
• Redefining the “commodity”
• Greater/earlier influence  *SD2 section 3.1*
• Re-positioning of the building occupants and acoustic practitioner  *ProPG para 3.14-3.15*